Patent

REMARKS

Claims 1-30 are currently pending in this application. Applicant has withdrawn claims 24-30 from consideration in response to a restriction requirement. Reconsideration is respectfully requested in light of the above claim amendments and the following remarks.

The Examiner objected to the specification for various informalities. Applicant has amended the specification in accordance with the Examiner's suggestions and respectfully requests that the objection to the specification be withdrawn.

The Examiner objected to claim 2 on informal grounds. Applicant has amended claim 2 in accordance with the Examiner's suggestion and respectfully requests that this objection be withdrawn.

The Examiner rejected claims 4, 7-9, 17 and 19 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended claims 4, 7-9, 17 and 19 in accordance with the Examiner's suggestions and respectfully requests that this rejection be withdrawn.

The Examiner has rejected claims 1-2, 4-7, 9, 12-21 and 23 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,549,650 to Bornzin et al. Applicant respectfully traverses this rejection.

Applicant's claimed invention as recited in independent claim 1 is directed towards a method for identifying preferred control parameters for use in controlling an implantable cardiac stimulation device for implant within a patient. For example claim 1 recites a method comprised in part by <u>detecting values</u> representative of

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transient cardiac performance corresponding to the different sets of control

parameters and estimating optimal control parameters for maximizing cardiac

performance based on the values representative of transient cardiac performance.

(Underlining added for emphasis only). Applicant respectfully submits that Bornzin et

al. do not disclose or suggest the recited claim elements.

Rather, Bornzin et al. utilize a cardiac performance matrix that correlates

cardiac performance (i.e. stroke volume, contractility or the like) with one or more

control parameters (i.e. heart rate, AV delay, or the like). In operation, Bornzin et al,

utilize a fill performance matrix subroutine that determines cardiac performance for

valid combinations of the control parameters. However, Bornzin et al. utilize a large

number of cardiac beats to determine the cardiac performance for a particular

combination of control parameters. (Bornzin et al. col. 19, lines 36-57).

For example, in one embodiment Bornzin et al. determine cardiac

performance for a particular combination of control parameters for 2048 beats by

summing the measured performance data for 2048 beats and dividing the result by

2048. (Bornzin et al., col. 19, lines 1-2). Bornzin et al. further disclose that the time

required to collect a single loop of 25 cells of data (i.e. a 5x5 performance matrix) is

approximately 18 hours for a heart beating a 60 beats per minute. (Bornzin et al.

col. 19, lines 47-54).

Thus, Bornzin et al, detect values of cardiac performance over an extended

period of time (a minimum of 512 cardiac beats) for each of a plurality of control

parameters to fill a cardiac performance matrix and then optimize cardiac

performance in accordance with the filled cardiac performance matrix. Bornzin et al.

do not however disclose or suggest estimating optimal control parameters for

maximizing cardiac performance based on the values representative of <u>transient</u> <u>cardiac performance</u> as recited in claim 1 of the present application.

Accordingly, Applicant respectfully submits that claim 1 is novel and non-obvious over Bornzin et al. and is allowable. Applicant further submits that claims 2, 4-7, 9, 12-21 and 23, that depend from 1, are allowable as is claim 1 and for additional limitations recited therein.

The Examiner has rejected claims 3 and 8 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,549,650 to Bornzin. The Examiner also rejected claim 22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,549,650 to Bornzin in view of U.S. Patent 5,800,471 to Baumann. Applicant respectfully traverses these rejections.

In view of the foregoing analysis of independent claim 1 in view of Bornzin et al., Applicant believes that the rejection of dependent claims 3, 8 and 22 under 35 U.S.C. §103 are rendered moot as claims 3, 8 and 22 depend from allowable independent claim 1.

In light of the above amendments and remarks, it is respectfully submitted that the application is in condition for allowance, and an early notice of allowance is requested.
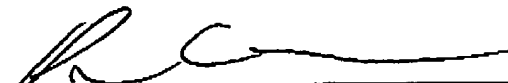
Pursuant to 37 C.F.R. 1.136(a)(3), Applicant hereby requests and authorizes the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and

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(2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 22-0265.

Respectfully submitted,

Dated: _5-2-06_

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